

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A dehumidification unit comprising alternate laminations of an adsorption element which supports an adsorbent and in which a plurality of first air ventilation passages through which air to be processed flows are formed planewise in rows, and a cooling element comprising a plurality of bended second air ventilation passage forming member in which a plurality of second air ventilation passages through which cooling air flows are formed planewise in rows,

wherein:

said cooling element is provided, at a planewise inner area thereof, with an opening, thereby being shaped like a frame, and wherein

a plurality of said second air ventilation passages is separated by said opening into an entry opening and an exit opening situated respectively on one passagewise side of the plurality of bended second air ventilation passage forming member and on ~~the~~an opposite passagewise side of the bended second air ventilation passage forming member thereof, wherein passage lengths of the entry opening and the exit opening do not extend the full length of the cooling element such that the cooling air flowing in the opening is brought into direct contact with the adsorption element.

2. (Canceled)

3. (Previously Presented) The dehumidification unit of claim 1, wherein each of said second air ventilation passages of said cooling element has an approximately rectangular cross-sectional shape.

4. (Previously Presented) The dehumidification unit of claim 1, wherein each of said second air ventilation passages of said cooling element has an approximately triangular cross-sectional shape.

5. (Previously Presented) The dehumidification unit of any one of claims 1, 3, and 4, wherein air stream regulating means, configured to inhibit the flow of said cooling air from deviating in the inside of said opening part, is disposed in said opening of said cooling element.

6. (Previously Presented) The dehumidification unit of any one of claims 1, 3, and 4 further comprising flow rate regulating means disposed on the side of said entry openings of said second air ventilation passages,

whereby the flow rate of said cooling air entering the inside of said opening through each of said entry openings is so regulated as to become higher the nearer to the downstream side of said first air ventilation passages of said adsorption element.

7. (Previously Presented) The dehumidification unit of claim 6, wherein said flow rate regulating means is formed by setting the passage length of said entry openings of said second air ventilation passages to become shorter the nearer to the downstream end of said first air ventilation passages.

8. (Previously Presented) A dehumidification unit comprising alternate laminations of an adsorption element which supports an adsorbent and in which a plurality of first air ventilation passages through which air to be processed flows are formed planewise in rows, and a cooling element comprising a plurality of bended second air ventilation passage forming member in which a plurality of second air ventilation passages through which cooling air flows are formed planewise in rows,

wherein:

said cooling element is provided with openings which overlap with said second air ventilation passages such that said second air ventilation passages of the plurality of bended second air ventilation passage forming member are each separated passagewise so as to include an entry opening and an exit opening, wherein passage lengths of the entry opening and the exit opening do not extend the full length of the cooling element such that the cooling air flowing in the openings is brought into direct contact with the adsorption element, and wherein

the passage resistance of said second air ventilation passages on the downstream side of said openings is set such that the passage resistance of second air ventilation passages nearer to an area of said cooling element corresponding to the upstream side of said first air ventilation passages of said adsorption element is greater than the passage resistance of second air ventilation passages nearer to an area of said cooling element corresponding to the downstream side of said first air ventilation passages of said adsorption element.

9. (Previously Presented) The dehumidification unit of claim 8, wherein the passage length of said second air ventilation passages on the downstream side of said openings is set such that the passage length of second air ventilation passages nearer to said area corresponding to the upstream side of said first air ventilation passages of said adsorption element is greater than the passage length of second air ventilation passages nearer to said area corresponding to the downstream side of said first air ventilation passages of said adsorption element.

10. (Currently Amended) The dehumidification unit of claim 9, wherein the passage length of said second air ventilation passages is set so as to become gradually shorter from the side nearer to said area corresponding to the upstream side of said first air ventilation passages of said adsorption element towards the side nearer to said area ~~(2d)~~ corresponding to the downstream side of said first air ventilation passages of said adsorption element.

11. (Previously Presented) The dehumidification unit of claim 9, wherein the passage length of said second air ventilation passages is set so as to become linearly shorter from the side nearer to said area corresponding to the upstream side of said first air ventilation passages of said adsorption element towards the side nearer to said area corresponding to the downstream side of said first air ventilation passages of said adsorption element.

12. (Previously Presented) The dehumidification unit of claim 9, wherein the passage length of said second air ventilation passages is set so as to become curvedly shorter from the side nearer to the area corresponding to the upstream side of said first air ventilation passages of said adsorption element towards the side nearer to said area corresponding to the downstream side of said first air ventilation passages of said adsorption element.

13. (Previously Presented) The dehumidification unit of claim 8, wherein the passage cross-sectional area of said second air ventilation passages on the downstream side of said openings is set such that the passage cross-sectional area of second air ventilation passages nearer to said area corresponding to the upstream side of said first air ventilation passages of said adsorption element is smaller than the passage cross-sectional area of second air ventilation passages nearer to said area corresponding to the downstream side of said first air ventilation passages of said adsorption element.

14. (Previously Presented) The dehumidification unit of claim 9, wherein the passage cross-sectional area of said second air ventilation passages on the downstream side of said openings is set such that the passage cross-sectional area of second air ventilation passages nearer to said area corresponding to the upstream side of said first air ventilation passages of said adsorption element is smaller than the passage cross-sectional area of second air ventilation passages nearer to said area corresponding to the downstream side of said first air ventilation passages of said adsorption element.

15. (Previously Presented) A dehumidification unit comprising alternate laminations of an adsorption element which supports an adsorbent and in which a plurality of first air ventilation passages through which air to be processed flows are formed planewise in rows, and a cooling element comprising a plurality of bended second air ventilation passage forming member in which a plurality of second air ventilation passages through which cooling air flows are formed planewise in rows,

wherein:

said cooling element is provided with openings which overlap with said second air ventilation passages such that said second air ventilation passages of the plurality of bended second air ventilation passage forming member are each divided passagewise so as to include an entry opening and an exit opening, wherein passage lengths of the entry opening and the exit opening do not extend the full length of the cooling element such that the cooling air flowing in the openings is brought into direct contact with the adsorption element, and wherein

the passage direction of said second air ventilation passages on the downstream side of said openings as viewed in plane view is inclined so as to get closer to an area of said cooling element corresponding to the downstream side of said first air ventilation passages of said adsorption element with approach towards the downstream side.

16. (Previously Presented) The dehumidification unit of any one of claims 8, 9, 13, and 14, wherein the passage direction of said second air ventilation passages on the downstream side of said openings as viewed in plane view is inclined so as to get closer to said area of said cooling element corresponding to the downstream side of said first air ventilation passages of said adsorption element with approach towards the downstream side.

17. (Previously Presented) The dehumidification unit of any one of claims 8, 9, 13, 14, and 15, wherein a plurality of sets of said openings and said second air ventilation passages situated downstream of said openings are provided in a back-and-forth arrangement relative to the flow direction of said cooling air in said cooling element.

18. (Previously Presented) The cooling element of claim 1, wherein said cooling element comprises at least one flat side-plate member.

19. (Previously Presented) The cooling element of claim 18, wherein said cooling element further comprises a second flat side-plate member.